



————— **CONTACT** — Boundaries of surficial deposits approximately located.

⊕ - - - - - **FAULT** — Dashed where inferred; dotted where concealed; bar and ball on downthrown side. Arrows on cross section indicate direction of relative movement.

⊕ - - - - - **ANTICLINE** — Showing trace of axial plane and plunge of axis; dashed where approximately located.

⊕ - - - - - **SYNCLINE** — Showing trace of axial plane and plunge of axis; dashed where approximately located.

STRIKE AND DIP OF BEDS

↘ 5
⊕ Inclin
⊕ Horizontal

→ **STRIKE OF VERTICAL AND NEAR-VERTICAL JOINTS**

× **BORROW PIT**

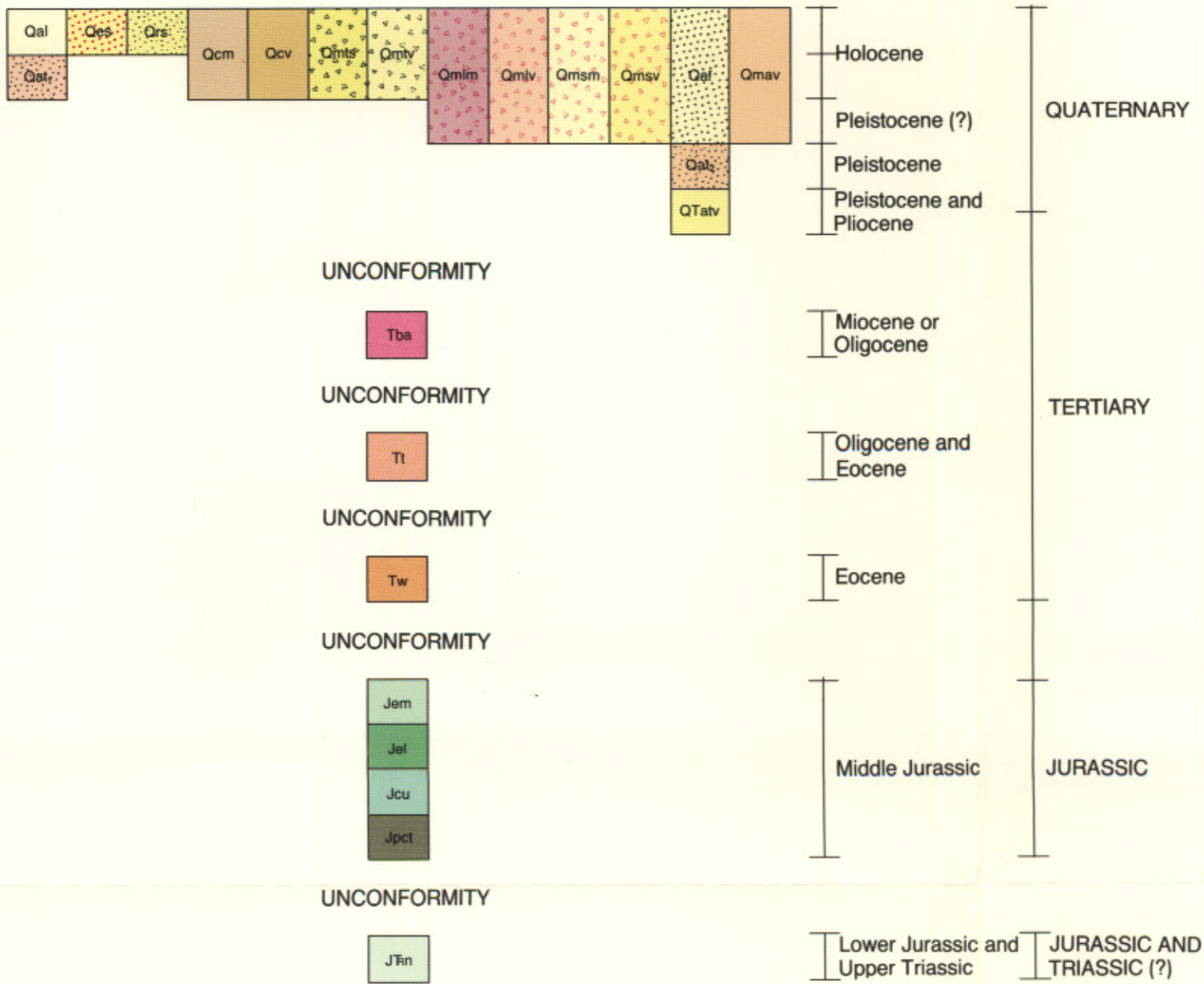
⊕ **OIL WELL** — Dry hole, showing name of well.

— - - - - **STRUCTURE CONTOURS** — Drawn on top of Navajo Sandstone. Long dashed where control less accurate. Short dashed where datum above land surface. Contours omitted in northeast sector because of insufficient data. Contour interval 100 ft.

DESCRIPTION OF MAP UNITS

- Qal** Floodplain alluvium — *Fine sand to boulder gravel.*
- Qas** Wind-blown sand — *Fine grains of quartz and minor silt.*
- Qrs** Sandy residuum — *Fine grains of quartz and small rock fragments.*
- Qcm** Mixed-lithology creep colluvium — *Subangular blocks of sandstone, limestone, and mudstone, dominant to abundant, and blocks of basaltic andesite.*
- Qcv** Volcanic-rock creep colluvium — *Subangular to rounded clasts of basaltic andesite.*
- Qnts** Sandstone talus — *Rockfalls of blocks of Navajo Sandstone and Page Sandstone.*
- Qntv** Volcanic-rock talus — *Rockfalls of basaltic andesite.*
- Qat** Low volcanic-gravel terrace alluvium — *Gravel of basaltic andesite as much as 20 ft. above stream level.*
- Qmim** Mixed-lithology lobate-slide debris — *Lobes of slide debris consisting of sandstone, shale, and volcanic rock.*
- Qmlv** Volcanic-rock lobate-slide debris — *Lobes of slide debris composed chiefly of basaltic andesite.*
- Qmsm** Mixed-lithology sheet-slide debris — *Irregular hummocky sheets of slide debris consisting of sandstone, shale, and volcanic rock.*
- Qmsv** Volcanic-rock sheet-slide debris — *Irregular hummocky sheets of slide debris composed chiefly of basaltic andesite.*
- Qal** Fan alluvium — *Silt and fine sand and gravel of local derivation.*
- Qmav** Volcanic-rock debris-flow colluvium and alluvium — *Angular to rounded clasts of basaltic andesite in unsorted colluvium that grades down-valley to well-sorted alluvium.*
- Qatv** High volcanic gravel terrace alluvium — *Poorly consolidated gravel composed of basaltic andesite as much as 1,000 ft. above stream level on terraces that pre-date cutting of canyons.*

- UNCONFORMITY**
- Tba** Basaltic andesite — *Dark-gray, vesicular, porphyritic flows.*
- UNCONFORMITY**
- Tt** Tuffaceous sediments — *Gray, yellow, orange, and brown tuffaceous conglomeratic sandstone.*
- UNCONFORMITY**
- Tw** Wasatch Formation — *Light-gray conglomerate and tuffaceous conglomeratic sandstone.*
- UNCONFORMITY**
- Jem** Entrada Sandstone, middle member — *Yellowish-gray and brownish-gray fine-grained, silty sandstone.*
- Jel** Entrada Sandstone, lower member — *Reddish-brown to pale-brown, crossbedded, fine-grained sandstone and minor dusky-red mudstone.*
- Jcu** Carmel Formation, upper member — *Grayish-yellow to reddish-brown shale and minor sandstone, limestone, and gypsum.*
- Jpct** Tongues of the Page Sandstone and Carmel Formation— *Thousand Pockets Tongue of the Page Sandstone: light-yellowish-gray, fine-grained sandstone. Judd Hollow Tongue of the Carmel Formation: reddish-brown siltstone and shale. Harris Wash Tongue of the Page Sandstone: light-grayish-orange, crossbedded, fine-grained sandstone.*
- UNCONFORMITY**
- JTin** Navajo Sandstone — *Chiefly light-grayish-orange, cross-bedded, fine-grained sandstone.*



FORMATION		SYMBOL	THICKNESS feet	LITHOLOGY
Alluvium, colluvium, eolium and residuum		Q	0-400	
Oldest alluvium		QTat	0-120	
Basaltic andesite		Tba	200+	
Tuffaceous sediments		Tt	100?-500?	
Wasatch Formation		Tw	0-80?	
Entrada Sandstone	Middle member	Jem	250+	
	Lower member	Jel	350	
Upper member, Carmel Formation		Jcu	300-600	
Tongues of the Page Sandstone and the Carmel Formation	Thousand Pockets Tongue, Page Sandstone	Jpct	0-130 0-50 0-100 0-30	
	Judd Hollow Tongue, Carmel Formation			
	Harris Wash Tongue, Page Sandstone			
Navajo Sandstone		JTin	1000+	

